AMENDMENTS

In The Claims

Claims 1-6 are previously cancelled.

Claim 7. (currently amended) A method for growing stoichiometric lithium niobate and lithium tantalate single crystals ~~by using the apparatus of claim 1, the method~~ comprising:

charging a solid feed material in a feeding zone of ~~the~~ a long crucible, wherein the feeding zone in a lower portion of the long crucible;

placing the separation member above the feeding zone of the long crucible;

charging a zone stuff in a melting zone of the long crucible, wherein the melting zone of the long crucible is located in an upper portion of the long crucible;

melting the zone stuff while keeping the feed material in the feeding zone as solid;

placing a crystal seed into the melting zone of the long crucible;

pull-growing a crystal body after the crystal ~~body~~ seed is melted; and

pushing the long crucible upward as the crystal body is grown.

Claim 8. (original) The method of claim 7, wherein the solid feed material contains stoichiometric lithium niobate

Claim 9. (original) The method of claim 7, wherein the zone stuff contains 58-60% of Li2O/(Li2O+Nb2O5).

Claim 10. (original) The method of claim 7, wherein the solid feed material contains stoichiometric lithium tantalate.

Claim 11. (original) The method of claim 7, wherein the zone stuff contains 58-60% of Li2O/(Li2O+Ta2O5).

Claim 12. (original) The method of claim 7, further comprising doping the solid feed material in the feeding zone with a dopant which has a first concentration.

Claim 13. (original) The method of claim 12, further comprising doping the zone stuff in the melting zone with a dopant which has a second concentration, wherein the ratio of the first concentration with respect to the second concentration is K, a segregation constant for the dopant.

Claim 14. (original) The method of claim 12, wherein the dopant is selected from magnesium oxide, zinc oxide, manganese, cerium, terbium, and iron.

Claim 15. (original) The method of claim 7, wherein the pulling rate of the crystal body is proportional to the pushing rate of the long crucible.

Claim 16. (original) The method of claim 7, wherein the ratio of the pulling rate of the crystal body with respect to the pushing rate of the long crucible is approximately equal to the ratio of the inner cross sectional area of the long crucible with respect to the cross sectional area of the crystal body, depending on the sintering density of the feeding material.

Claim 17. (original) The method of claim 7, further comprising:

slowly cooling down the chamber to room temperature after the crystal body is grown a predetermined length, and

removing the crystal body.

Claim 21. (currently amended) A method for growing stoichiometric lithium niobate and lithium tantalate single crystals ~~by using the apparatus of claim 18, the method~~ comprising:

charging a solid feed material in ~~the~~ a long crucible;

charging a zone stuff above the solid feed material in the long crucible;

melting the zone stuff while keeping the underlying solid feed material in a solid phase;

placing a crystal seed in the zone stuff of the long crucible;

pull-growing a crystal body after the crystal ~~body~~ seed is melted; and

pushing the long crucible upward as the crystal body is grown.

Claim 22. (original) The method of claim 21, wherein the solid feed material contains stoichiometric lithium niobate

Claim 23. (original) The method of claim 21, wherein the zone stuff contains 58-60% of Li2O/(Li2O+Nb2O5).

Claim 24. (original) The method of claim 21, wherein the solid feed material contains stoichiometric lithium tantalate.

Claim 25. (original) The method of claim 21, wherein the zone stuff contains 58-60% of Li2O/(Li2O+Ta2O5).

Claim 26. (original) The method of claim 21, further comprising doping the solid feed material in the feeding zone with a dopant which has a first concentration.

Claim 27. (original) The method of claim 26, further comprising doping the zone stuff in the melting zone with a dopant which has a second concentration, wherein the ratio of the first concentration with respect to the second concentration is K, a segregation constant for the dopant.

Claim 28. (original) The method of claim 26, wherein the dopant is selected from magnesium oxide, zinc oxide, manganese, cerium, terbium, and iron.

Claim 29. (original) The method of claim 21, wherein the pulling rate of the crystal body is proportional to the pushing rate of the long crucible.

Claim 30. (original) The method of claim 21, wherein the ratio of the pulling rate of the crystal body with respect to the pushing rate of the long crucible is approximately equal to the ratio of the inner cross sectional area of the long crucible with respect to the cross sectional area of the crystal body, depending on the sintering density of the feeding material.

Claim 31. (original) The method of claim 21, further comprising:

slowly cooling the chamber to room temperature after the crystal body is grown a predetermined length, and

removing the crystal body.